

**The following claims are presented for examination:**

1. (Currently Amended) An apparatus comprising:  
a plurality of optical fibers, wherein:  
    said optical fibers each having a first end and a second end;  
    said fibers are capable of transmitting infrared radiation ("IR");  
a sensor for sensing IR, wherein said sensor is in IR-sensing contact with said first end of each of said optical fibers;  
a separator, wherein said separator engages said plurality of fibers and is suitable for spatially separating said optical fibers from one another in a pattern that enables said optical fibers to physically engage individual samples on a sample plate.
2. (Original) The apparatus of claim 1 further comprising a collar for bundling said optical fibers.
3. (Original) The apparatus of claim 1 wherein said second end of said optical fibers are physically adapted to receive a first chemical entity.
4. (Original) The apparatus of claim 3 wherein said individual samples comprise said first chemical entity.
5. (Original) The apparatus of claim 1 further comprising a surface having a binding compound disposed thereon.
6. (Original) The apparatus of claim 1 wherein said first end of said optical fibers are physically coupled to said sensor.
7. (Original) The apparatus of claim 1 wherein said separator is engaged to said plurality of fibers such that it can slide along said plurality of fibers.

**8.** (Currently Amended) A method comprising:  
physically engaging a chemical entity to a first end of an IR-transmitting fiber;  
bringing said chemical entity in contact with a binding compound; and  
conducting a thermal signal resulting from a binding interaction to a thermal sensor  
through said IR-transmitting fiber, wherein said binding interaction occurs between said  
chemical entity and said binding compound.

**9.** (Original) The method of claim 8 further comprising sliding a separator along  
said IR-transmitting fiber.

**10.** (Original) The method of claim 8 wherein engaging a chemical entity further  
comprises inserting said first end of said IR-transmitting fiber into a sample carrier.

**11.** (Original) The method of claim 8 wherein bringing said chemical entity in contact  
with a binding compound further comprises inserting said first end of said IR-transmitting  
fiber into a well after engaging said chemical entity.

**12.** (Currently amended) A method comprising:  
positioning a movable separator along a plurality of IR-transmitting fibers to obtain a  
desired spacing between ~~said~~ adjacent IR-transmitting fibers at ~~one~~ a sampling end  
thereof; and  
conducting a thermal signal through at least one of said IR-transmitting fibers.

**13.** (Currently Amended) The method of claim 12 further comprising engaging a  
chemical entity to said ~~one~~ sampling end of said IR-transmitting fibers.

**14.** (Original) The method of claim 13 further comprising bringing said chemical  
entity into contact with a binding compound.

**15.** (Original) The method of claim 12 wherein conducting a thermal signal further  
comprises conducting said thermal signal to a thermal sensor.